CHAPTER 4

CONTROL BLOCKS

4.1. <u>Product Identification Block</u>. This block is required for
all data types and shall be formatted as shown in Figure 4-1.
The data field shall identify the origin of the product, the
classification, retention time, product identifier, and file
time. These fields shall be as defined in Figure 4-1 except as
otherwise noted below or under individual data type format
discussions.

4.2. <u>End of Product Block</u>. The End of Product Block format is
shown in Figure 4-2. This block shall be standard for all data
types.

4.3. <u>Classification Block</u>. The Classification Block format is
shown in Figure 4-3. This block shall be used if additional
information regarding the classification of the product data set
(other than that information provided in the CLASSIFICATION byte
of the Product Identification Block - Figure 4-1) is required.

4.4. <u>Define Plot Parameters Block</u>. This block shall be
formatted as shown in Figure 4-4. When used, the fields required
will be filled and all other fields will be either zero or blank
filled, unless the length is used to foreshorten the block when
the latter fields are not needed. IF LENGTH is not used, the
full format is required. The Define Plot Parameters Block may be
used prior to any data block to indicate the settings of display
parameters. Once set, the parameters remain in that state until
superseded by another Define Plot Parameters Block.

4.5. <u>Define Datawidth/Fieldwidth Block</u>. The Define
Datawidth/Fieldwidth Block shall be formatted as shown in Figure
4-5. It may be used to redefine the number of bits allocated to
(field width) and used by (data width) each data element in the
specified mode/submode. The following rules shall apply to the
use of this block:

> A. Redefined Datawidth/Fieldwidth values shall not apply to
> the LENGTH, MODE, SUBMODE, CHECKSUM, or other informational
> elements in the specified Mode/Submode, i.e., redefined
> values apply only to the data itself.

> B. Redefined values shall remain in effect for all
> subsequent blocks with the specified Mode/Submode until
> reset by another Define Datawidth/Fieldwidth Block or End of
> Product Block, whichever comes first in the product data set
> sequence.

C. The Define Datawidth/Fieldwidth Block may be inserted anywhere in the product data set but applies only to the blocks that immediately follow it in the product data set sequence.

D. Each block may be used to redefine values for one Mode/Submode. Additional blocks may be used, as required, to redefine values for additional mode/submode blocks. However, these blocks must be inserted immediately before the Mode/Submode to which the redefined Fieldwidth and Datawidth apply.

4.6. Product Information Block. The Product Information Block shall be formatted as shown in Figure 4-6. Use of this block allows entry of the product base date and time, and also the identifier program of the model which was used to generate the product. With appropriate use of the LENGTH, the Base Date/Time may appear alone in the block. This block is intended to appear only once within any product.

4.7. Line Information Block. The Line Information Block shall be formatted as shown in Figure 4-7. It is intended to be used optionally preceding any type of vector block. When the Line Information Block is present, it assigns a labeling value to the displayable line. This block must immediately precede the vector block which it describes. The definition it established remains in effect only for the vector block which immediately follows it.

4.8 Map Background Definition Block. The Map Background Definition Block shall be formatted as shown in Figure 4-8. It is intended to be used optionally to permit the user to map the product pixel coordinates to earth coordinates. This block must precede the vector, raster, or gridded blocks which it locates.

4.9 Set Active Font Block. The Set Active Font Block shall be formatted as shown in Figure 4-9. It is intended to be used optionally to permit the user to designate the active character set. This block must precede the vector blocks which are affected by it.

4.10 Define Color Palette Block. The Define Color Palette Block shall be formatted as shown in Figure 4-10. It is intended to be used optionally to permit the user to map the display colors required to correctly display a color modified vector graphic product or a color modified raster graphic product (which could include a raster image with overlaid vector products). The color palette permits the assignment of specific colors, including shades of gray, to each pixel.

FF	LENGTH (I)	
001		001
CHARACTER 1		CHARACTER 2
CHARACTER 3		CHARACTER 4
CLASSIFICATION		RETENTION TIME
FILE INDICATOR		CHARACTER 2
CHARACTER 3		CHARACTER 4
CHARACTER 5		CHARACTER 6
CHARACTER 7		CHARACTER 8
CHARACTER 9		CHARACTER 10
YEAR		
MONTH		DAY
HOUR		MINUTE
CHARACTER 11		CHARACTER 12
CHARACTER 13		CHARACTER 14
CHARACTER 15		CHARACTER 16
CHECKSUM		

Originator Identification

Product Identifier

Product File Time

Product Identifier Continuation

Figure 4-1.   Product Identification Block; Mode 1, Submode 1

NOTES: Figure 4-1: Product Identification Block; Mode 1, Submode 1

1. *If Length is not used, Product File Time is the last field.*

2. *Originator Identification: A four character identifier of the facility that generates or compiles the product.*

3. *CLASSIFICATION: The classification code is a single ASCII character defining the classification for this product as follows:*

> *U = Unclassified*
> *C = Confidential*
> *S = Secret*
> *T = Top Secret*
> *E = Encrypt for Transmission Only (EFTO)*

If additional information is required, a classification Block shall be used. (Section 4.3.)

4. *RETENTION TIME: The RETENTION TIME is the default time, in days, the system shall use to retain the product before purging it. This byte will contain 377 (octal) or all binary zeros when this value is not furnished.*

5. *Product Identifier: The FILE INDICATOR byte plus the succeeding nine ASCII character bytes contain the Product Identifier. The FILE INDICATOR byte (an 8 bit binary value) specifies the naming convention used to identify the product. The Product Identifier is defined as follows:*

Characters/ bytes	Definition
1	*File Indicator determines originating agency. See Appendix D, Table D-1.*
2-10	*Determined by originating agency*

6. *Product File Time: The Product File Time shall consist of a full century year (16 bit integer), month, day, hour, and minute (8 bit integers). It represents a means of further identifying products with identical Product Identifiers. Unless otherwise specified, this time shall be the date/time the product was generated.*

7. *Product Identifier Continuation: This optional field is used for product sets which require additional characters for identification. The LENGTH field is required to be present if this field is to be used.*

Figure 4-1. (Cont.) Product Identification Block; Mode 1,
Submode 1

FF	LENGTH (I)	
001		002
CHECKSUM		

Figure 4-2.   End of Product Block; Mode 1, Submode 2

FF	LENGTH (I)	
001		003
CHARACTER 1		CHARACTER 2
CHARACTER 3		CHARACTER 4

.
.
.

	LAST CHARACTER
CHECKSUM	

NOTES: Figure 4-3

1. CHARACTER: The information in ASCII code.

2. This block follows the rules for non-graphic blocks.   See Section 2.2.3.2.

Figure 4-3.   Classification Block; Mode 1, Submode 3

FF	LENGTH (I)	
001		004
Z	ZOOM THRESHOLD	ZOOM FACTOR
PLOT COLOR		BACKGROUND COLOR
LINE CHARACTER		LINE WIDTH
CHARACTER 1		CHARACTER 2
CHARACTER 3		CHARACTER 4
LOGICAL FILL (R/L)		FILL PATTERN NO.
CHECKSUM		

]Line Mnemonic

NOTES:

1. Z: Zoom Disable: If Z=1, the displayable data will be invariant in display size regardless of zoom selection. If Z=0 displayed data are sized according to zoom selection.

2. ZOOM THRESHOLD: The ZOOM THRESHOLD is the minimum magnification that may be applied to the product within the constraints of the data density from which the product was built. This value is the denominator of the fractional area of the entire viewing space. Currently assigned codes (decimal) which are representative of the zoom value are:

00 - Display at all zoom levels (default)
01 - Display at 1X or higher magnification
02 - Display at 2X or higher magnification
03 - Display at 3X or higher magnification

    .
    .
    .

16 - Display at 16X or higher magnification

3. ZOOM FACTOR: An optional zoom (magnification) factor to be assigned to strings selectively at a local level. These values range from 0-255 (decimal).

0 - No zoom (default)
1 - 1X
2 - 2X
3 - 3X

   .
   .

Figure 4-4. Define Plot Parameters Block; Mode 1, Submode 4

4.   *PLOT COLOR and BACKGROUND COLOR: These values range from 0 to 255 (decimal). Application of National Institute of Standards and Technologies (NIST) color standards is to be determined.*

5.   *LINE CHARACTER: Assigned values are:*

> *0 - Continuous (default)*
> *1 - Dotted line (alternate pixels)*
> *2 - Dashed line (short dashes)*
> *3 - Dashed line (long dashes)*
> *4 - Dotted line (every 4th pixel)*
> *5 - Symbolic line*

6.   *LINE WIDTH: This value indicates the thickness of line in pixels.*

7.   *Line Mnemonic: Line mnemonics are specified in Tables A2-1 and A2-2.*

8.   *LOGICAL FILL (R/L): A flag which indicates whether fill is to be done on the Right or on the Left side of the vector string as it proceeds. If no fill is to be used, this value is set to zero (the default value). Numbers in the range 1 to 127 indicate fill is to be made on the right. Numbers in the range 128 to 255 indicate fill is to be made on the left. Numbers may be chosen within each range to specify a fill algorithm or manner of execution.*

9.   *FILL PATTERN NO.: A preassigned value which specifies the type of pattern to be used in the fill area. A value of zero is used if no fill is being specified (the default value). Pattern numbers are to be assigned by inter-agency agreement.*

10. *Values defined by this submode are effective on all subsequent modes until redefined.*

11. *This block can be shortened by using a LENGTH value less than the maximum number of byte pairs shown in the figure. The fields past the LENGTH count will be truncated and the information they control not changed.*

Figure 4-4. (Cont.)   Define Plot Parameters Block; Mode 1,
Submode 4

FF	LENGTH (I)	
001		005
f	FIELDWIDTH	d	DATAWIDTH
MODE		SUBMODE
CHECKSUM		

NOTES:

1.   f: If this bit is set, the data will be continuous and cross byte and byte/pair boundaries.

2.   FIELDWIDTH: An integer number that defines the number of bits allocated to each data element in the specified mode/submode.   The legal range is 1 through 16 (decimal).

3.   d: When this bit is set, the data will be left justified in the field defined by FIELDWIDTH; i.e., empty spaces will trail the data.

4.   DATAWIDTH: An integer number that defines the number of bits used by the actual data within the FIELDWIDTH. The legal range is 1 through FIELDWIDTH. Example: If the data are three bits wide and are repeated every four bits, then FIELDWIDTH = 4, DATAWIDTH = 3.

5.   MODE and SUBMODE: The mode and submode to which the redefined fieldwidth and datawidth apply.

Figure 4-5.   Define Datawidth/Fieldwidth Block; Mode 1, Submode 5

FF	LENGTH (I)	
001	006	
CHARACTER 1 HOUR	CHARACTER 2 (HH)	
CHARACTER 3 DATE	CHARACTER 4 (DD)	
CHARACTER 5 MONTH	CHARACTER 6 (MM)	
CHARACTER 7 YEAR	CHARACTER 8 (YY)	
CHARACTER 1	CHARACTER 2	
CHARACTER 3	CHARACTER 4	
	. . .	
	LAST CHARACTER	
CHECKSUM		

Base Date/Time (brackets rows CHARACTER 1–8)

Originating Model or Program (brackets rows CHARACTER 1 through LAST CHARACTER)

NOTES:

1. Base Date/Time: An eight character ASCII field which specifies the Greenwich Mean Time the product is based on. Characters 1 and 2 give the two digit hour of the 24 hour clock. Characters 3 and 4 are the two digit date of the month. Characters 5 and 6 are the two digit month in the range 01-12. Characters 7 and 8 give the units and tens digit of the year. This is always an eight character field.

2. Originating Model or Program. A variable length string of ASCII characters used to specify the process which generated the product. If LENGTH field has been shortened in the block, then this field is omitted entirely.

3. This block should appear only once with a product.

Figure 4-6. Product Information Block; Mode 1, Submode 6

FF	LENGTH (I)	
001	007	
CHARACTER 1	CHARACTER 2	⎤
. . .		Line Value for Labeling Purposes
	LAST CHARACTER	⎦
CHECKSUM		
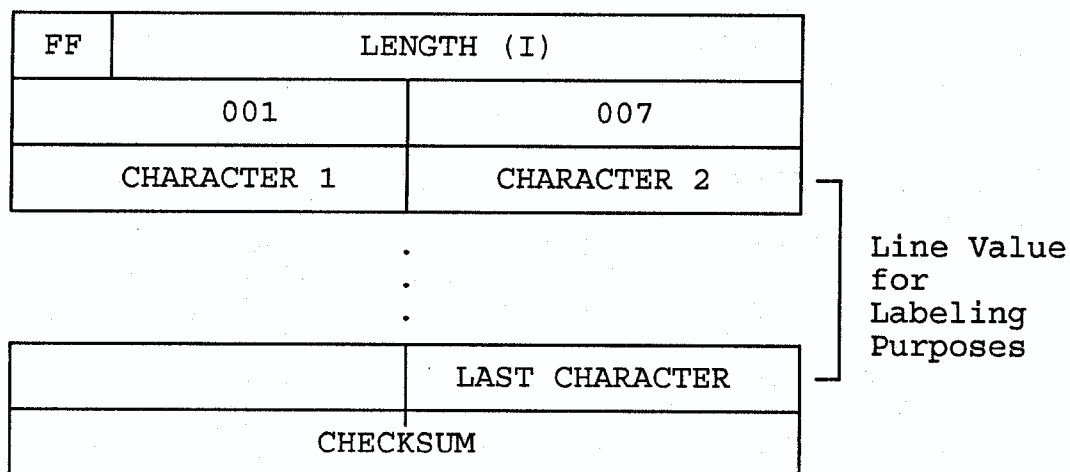
NOTES:

1. Line Value of Labeling Purposes: A variable length string of ASCII characters which assigns a value (label) to the vector string which follows this block. Only the required number of characters to hold the label will be used. If there are an odd number of characters, the final character will be blank. The line label assigned by this block will remain in force only for the vector block which immediately follows it. If another vector block follows the first with no preceding Line Information Block, it will be assumed to be an unlabeled line.

2. This block is assumed to precede any vector block which is required to be labeled as part of the line display process.

Figure 4-7.   Line Information Block; Mode 1, Submode 7

FF	LENGTH (I)	
.001		010
COORDINATE FLAG		COUNT OF REF PNT
UPPER LEFT CORNER LATITUDE		
UPPER LEFT CORNER LONGITUDE		
UPPER RIGHT CORNER LATITUDE		
UPPER RIGHT CORNER LONGITUDE		
LOWER RIGHT CORNER LATITUDE		
LOWER RIGHT CORNER LONGITUDE		
LOWER LEFT CORNER LATITUDE		
LOWER LEFT CORNER LONGITUDE		
VERTICAL MERIDIAN		
STANDARD LATITUDE OF THE PROJECTION		
SECOND STANDARD LATITUDE		
CHARACTER 1		CHARACTER 2
CHARACTER 3		CHARACTER 4
CHARACTER 5		CHARACTER 6
NULL		NULL
CHECKSUM		

Coordinates for Map Background (bracket spanning the eight corner latitude/longitude rows)

6 - Byte Background Name (bracket spanning CHARACTER 1 through CHARACTER 6)

Figure 4-8. Map Background Definition Block;
Mode 1, Submode 10

NOTES: Figure 4-8:

1. COORDINATE FLAG: Coordinate System Indicator:

Flag	M =	N =
0	Latitude	Longitude
Not 0	Not defined	Not defined

2. COUNT OF REFERENCE POINTS: The number of points for defining the coordinate system.

3. LATITUDE/LONGITUDE of the four corner points in the sequence of upper left, upper right, lower right, and lower left. The values are hundreds of degrees of north latitude or west longitude.

4. SECOND STANDARD LATITUDE: This value is for use with those projections that require two standard latitudes. If not applicable, use 99.99 degrees.

5. CHARACTERS 1-n: The ASCII characters that make up the background name as defined in Table C2-7, Background Names.

Figure 4-8. (Cont.)   Map Background Definition Block;
Mode 1, Submode 10

FF	LENGTH (I)	
001	011	
CHARACTER 1	CHARACTER 2	⎤ 4-Byte
CHARACTER 3	CHARACTER 4	⎦ Font Name
NULL	NULL	
CHECKSUM		

NOTES:

1. *This mode is used to designate the active character set. This remains in effect for all text plotting commands until another Set Active Font block is encountered.*

2. *Font Name: The Name of the font set which is a 4-byte ASCII character name.*

Figure 4-9.   Set Active Font Block; Mode 1, Submode 11

FF	LENGTH (I)		
001		012	
PIXEL VALUE BASE			
PIXEL VALUE OFFSET		RED COMPONENT	
GREEN COMPONENT		BLUE COMPONENT	

.
.
.

CHECKSUM

NOTES:

1.   Pixel Value Base and Pixel Value Offset: The Pixel Value Base shall be added to the Pixel Value Offset to form a Pixel Value. This is used to define color maps for pixel depths greater than 8 bits. The Pixel Value Base shall be zero for products with depths of eight bits or less.

2.   Pixel Value Offset and Components: The Pixel Value Offset and Red, Blue, and Green Components shall define one entry in the color palette for the product, and may be repeated as necessary.

3.   There shall be as many color palette entries as are needed (up to the block size limitation). If necessary, the DEFINE COLOR PALETTE block shall be repeated.

4.   If a DEFINE COLOR PALETTE block is not present in a product block sequence, images shall be interpreted to be grayscale and the PLOT COLOR, BACKGROUND COLOR, and LINE WIDTH entries of the DEFINE PLOT PARAMETERS block (Mode 1, Submode 4) shall be ignored.

5.   If a DEFINE COLOR PALETTE block is present in a product block sequence, the PLOT COLOR, BACKGROUND COLOR, and LINE WIDTH fields of the Mode 1, Submode 4 block will be used overriding the color defaults of succeeding product blocks [(4,1), (4,5), (5,1), (5,2), and (5,3)] as follows:

> *Mode 4 Submode 1 (4,1) and Mode 4 Submode 5 (4,5) - For single-color vectors, PLOT COLOR (1,4) overrides the default color of the line or fill area. For two-color line styles (e.g., the mnemonic SFA), PLOT COLOR (1,4) redefines the first color while BACKGROUND COLOR (1,4) redefines the second. The LINE WIDTH (1,4) may affect the drawn width of the line. The LINE WIDTH affects the line width of solid and dashed lines. The LINE WIDTH does not affect the line width of symbolic lines types identified as "Fronts."*

Figure 4-10.   Define Color Palette Block; Mode 1, Submode 12

Notes: Figure 4-10 (Cont.)

Mode 5 Submode 1 (5,1) - The PLOT COLOR (1,4) changes the color of the plotted text, while the BACKGROUND COLOR (1,4) affects the color of the blanking.

Mode 5 Submode 2 (5,2) - The PLOT COLOR (1,4) changes the color of the plotted text or symbol, while the BACKGROUND COLOR (1,4) affects the color of blanking.

Mode 5 Submode 3 (5,3) - The PLOT COLOR (1,4) changes the color of the plotted wind barb, while the BACKGROUND (1,4) affects the color of the blanking.

Figure 4-10 (Cont.). Define Color Palette Block;
Mode 1, Submode 12